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ABSTRACT

Developed by the Initial Learning in Mainstreaming Project, the manual presents an instructional program to teach mainstreamed handicapped elementary school students how to tell and compute time in terms of hours, minutes, and seconds. In addition to the basic time facts, the lessons cover carrying or borrowing with off-base-10 time facts, and conversion from one unit of time to another when more than one unit is involved. In addition to detailed teaching instructions, the manual includes tests, worksheet problems, and pages to be made into transparencies for projection. (DLS)

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# OFF BASE 10

# WORKING WITH

# HOURS, MINUTES, SECONDS

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by
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EC123003

Initial Learning in
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| Transparencies | Worksheets & Tests |
|---|---|
| **Section #1** | |
| #1 | #1 |
| | #2 |
| | #3 To be Recorded |
| **Section #2** | |
| | #4 To be Recorded |
| #2 | #5 To be Recorded |
| #3 | #6 |
| | #7 To be Recorded |
| | #8 To be Recorded |
| | #9 To be Recorded |
| | #10 |
| | #11 |
| | #12 |
| | #13 |
| | #14 |
| | #15 |
| | #16 |
| | Test to be Recorded |
| **Section #3** | |
| #4 | #17 |
| #5 | #18 To be Recorded |
| #6 | #19 |
| #7 | #20 |
| #8 | #21 To be Recorded |
| #9 | #22 |
| #10 | #23 |
| #11 | #24 To be Recorded |
| #12 | #25 |
| | #26 To be Recorded |
| | #27 To be Recorded |
| | #28 To be Recorded |
| | Test to be Recorded |

This manual is considerably less structured than some other manuals produced by the Initial Learning in Mainstreaming Project. Unit one is intended to teach the necessary time facts. Unit two is intended to teach the process when carrying or borrowing is involved with an off base 10 time fact. Unit three is intended to teach the conversion from one unit of time to another when more than one unit is involved.

There are two instructional programs produced by the Initial learning in Mainstreaming Project that deal with time relationships. One contains hours, minutes, and seconds and the other contains years, months, weeks and days as the areas of emphasis. Structure is provided as to how the units are to be taught but exact scripts, tapes etc. are not present. Study the sections before presenting them to the class so that you are familiar with the question format and the purpose of each question in leading to a solution to the problem. It is important to be familiar with the material provided before starting a teaching unit. Then proceed with the instructional units providing additional instruction as needed. Use the key provided at the front of the manual in order to determine which worksheets are recorded and the sequence of transparencies and worksheets.

In cases where the math curriculum will not accommodate the necessary time for this program in its entirety it is suggested that it be split between two grades, using units one and two in the earlier grade and reviewing unit one and using unit three in the upper grade.

Section I Off-Base 10 - Time
(Seconds - Minutes - Hours - Days)

This unit is intended to teach the facts involved in segments of time, namely: seconds - minutes - hours - day.

Steps in Teaching Facts

(1) Point to the fact and repeat it 3 times.
(2) Have class say it with you 3 times.
(3) Split the class into halves and have one side say it with you 3 times while the others listen. Then have the other half say it with you 3 times while the first half listens.
(4) Do this with each fact.
(5) Cover the part of the "fact sentence" containing the numbers and ask questions such as: "How many seconds in a minute?", etc.
(6) Practice, in this manner, all of the facts 2 or 3 times.
(7) "Jump around" with the facts asking questions in different ways and in different order.

During this presentation you may want to vary the procedure by dividing the children as they respond, such as: by desk rows, left - right halves, boys - girls, etc. This will increase interest.

On worksheet #1 have children just do <u>one</u> part at a time (A, then B - C then D). Teacher checks answers for A with class, then B, C then D.

It is important to do this first worksheet in this manner. This gives the teacher an opportunity to correct any errors before an entire page has been done using incorrect facts.

## BORROWING AND CARRYING

Borrowing is of more concern in later problem accuracy on time problems than carrying. The transparencies are geared toward borrowing. Beginning on worksheet #9 some carrying is introduced. To illustrate this take transparency #2 and with it projecting before the class, write over the subtraction terms and talk the class through the process. After the class has gotten some practice the teacher explanation may be shortened to just a reminder such as "Remember you are borrowing (or carrying) 60 seconds not 10 seconds because there are 60 seconds in a minute, etc., etc."

Transparency #3 also includes 1 problem using the carrying process.

**If the class experiences more difficulty than provided for in the manual:**

It is a good educational practice, despite what the worksheet might look like, to only assign a few problems at a time until the teacher is sure the class knows the process involved. One format for doing this might be as follows: Let's say that all of the structured type worksheets have been used and the class still needs more help but all that are left are work or practice sheets that do not provide help for the student or do not naturally break up for one problem at a time assigning. Let's say the worksheets has 30 problems on it. The teacher might do the following: Provide additional instruction, assign problem #1 and correct it taking note of the students who miss problem #1. Then assign problems 2-6 (5 problems). This will allow the class to stay busy while the teacher goes around and provides help to those students who need help. If need be, the procedure could be repeated with the remaining problems. This type of procedure could (1) provide the help the slower students need, (2) provide the practice students need, (3) assist discipline by keeping the students working while help is given those students who do not understand the concept. This type of procedure would only be utilized when enough of the class has not mastered the concept to justify this format instead of remedial instruction to isolated students with problems.

After the borrowing and carrying section has been completed administer the test and record the results.

TEST

Name_____ Date_____

(1) 7 hr. 30 min.
- 4 hr. 40 min.

(2) 15 min. 51 sec.
- 7 min. 57 sec.

(3) 27 da. 11 hr.
+ 18 da. 21 hr.

(4) 15 hr. 38 min.
- 7 hr. 46 min.

(5) 11 da. 6 hr.
- 8 da. 9 hr.

(6) 23 min. 19 sec.
- 15 min. 37 sec.

(7) 17 da. 10 hr.
- 9 da. 22 hr.

(8) 23 hr. 10 min.
- 17 hr. 43 min.

(9) 48 min. 23 sec.
+ 27 min. 38 sec.

(10) 9 da. 16 hr.
- 4 da. 21 hr.

This lesson is intended to teach children how to convert from one segment or unit of time to another. This will be done by following this:

# TEACHING PROCEDURE

1. Study the question steps and worked out examples (transparencies 1 to 5) until you are familiar with what the steps mean and how they function in the solution of the problem.
2. Using transparencies #4 through #8 (in order), explain to the class the question steps and go through the examples of how they are done by using the step questions.
3. Do worksheet #17, <u>one problem at a time</u>. Assign one problem and then correct and discuss it. Do this with <u>each</u> of the <u>5</u> problems on this worksheet. (Assign, correct, discuss, etc.) THEN use worksheets #18 and #19 as practice sheets. Correct each sheet after it has been completed before assigning the next.
4. Use transparencies #9 through #12 to show what to do if the problem doesn't come out even and then proceed with worksheet #20 and #21.

   On worksheets #22 and #23 the student must add the spot for the remainder to be recorded. If this proves to be too large of a step for the class, worksheets #24 and #25 are available as intermediate worksheets. These worksheets contain a place to record the remainder. These worksheets may also be used as remedial worksheets if problems are experienced on later worksheets in this regard.

5. On worksheets #26, 27, 28, follow this procedure:
   - A - Assign problem A, correct and discuss
   - B - Assign problem B, correct and discuss
   - C - Assign the 1st section, correct and discuss
   - D - Assign the 2nd section, correct and discuss
   - E - Assign the 3rd section, correct and discuss
6. Administer test and record the results.

| See the key at the beginning of the manual to determine which worksheets are recorded. |
|---|

* Notice that the "formula format" has been reversed on different worksheets. This is to show the students that the mathematical sentence is true in either case.

TEST

Name_____ Date_____

(1) 3 min. = _____ sec.

(2) 240 sec. = _____ min.

(3) 72 hr. = _____ da.

(4) 6 hr. = _____ min.

(5) 43 hr. = _____ da.

(6) 5 min. = _____ sec.

(7) _____ da. = 48 hr.

(8) _____ min. = 360 sec.

(9) _____ da. = 120 hr.

(10) 6 da. = _____ hr.

(11) _____ hr. = 7 da.

(12) 10 min. = _____ sec.

(13) _____ sec. = 8 min.

(14) 120 min. = _____ hr.

(15) _____ hr. = 420 min.

(16) 128 min = _____ hr.

(17) 8 da. = _____ hr.

(18) 345 sec. = _____ min.

(19) 24 hr. = _____ da.

(20) _____ min. = 10 hr.

TEST RECORD FORM

| Student Names | Total Score | Process Score | Problem: Time Facts | Problem: With Borrowing | Problem: Without Borrowing | Problem: Carrying | Comments |
|---|---|---|---|---|---|---|---|
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |

TEST RECORD FORM

| Student Names | Total Score | Process Score | Problem | | | | Comments |
|---|---|---|---|---|---|---|---|
| | | | Time Facts | With Borrowing | Without Borrowing | Carrying | |
| | | | | | | | |
| | | | | | | | |
| | | | | | |

Worksheet Record Form

| Student Name | Worksheet #3 | Worksheet #4 | Worksheet #5 | Worksheet #7 | Worksheet #8 | Worksheet #9 | Worksheet #18 | Worksheet #21 | Worksheet #24 | Last Section - Worksheet #26 | Last Section Worksheet #27 | Last Section Worksheet #28 | A & B Worksheet #26 | A & B Worksheet #27 | A & B Worksheet #28 | Optional | Optional |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | |

Worksheet Record Form

| Student Name | Worksheet #3 | Worksheet #4 | Worksheet #5 | Worksheet #7 | Worksheet #8 | Worksheet #9 | Worksheet #18 | Worksheet #21 | Worksheet #24 | Last Section Worksheet #26 | Last Section Worksheet #27 | Last Section Worksheet #28 | A & B Worksheet #26 | A & B Worksheet #27 | A & B Worksheet #28 | Optional | Optional |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | |

KEY

Worksheet #1

| (A) | (B) | (C) | (D) | | | |
|---|---|---|---|---|---|---|
| 60 | 60 | 60 | 24 | 24 | 60 | 60 |
| 60 | 24 | 24 | 60 | 60 | 60 | |
| 24 | 60 | 60 | 60 | 60 | 24 | |

Worksheet #2

| | | |
|---|---|---|
| 60 | sec. | min. |
| hr. | 60 | min. |
| 24 | hr. | da. |
| min. | 60 | sec. |
| 60 | min. | hr. |
| da. | 24 | hr. |
| min. | 60 | sec. |
| 60 | min. | hr. |
| 24 | hr. | da. |
| 60 | sec. | min. |

Worksheet #3

| | | |
|---|---|---|
| 24 | hr. | da. |
| 60 | min. | hr. |
| 60 | sec. | min. |
| min. | 60 | sec. |
| hr. | 60 | min. |
| da. | 24 | hr. |
| 60 | sec. | min. |
| da. | 24 | hr. |
| 60 | min. | hr. |
| min. | 60 | sec. |

Worksheet #4

(1) Yes
(2) no
(3) no
(4) no
(5) yes
(6) yes
(7) yes
(8) no
(9) yes
(10) yes
(11) yes
(12) no
(13) no
(14) yes
(15) no
(16) yes
(17) yes
(18) no
(19) yes
(20) no

Worksheet #5

(1) 14 min. 8 sec.
(2) 7 hr. 45 min.
(3) 7 da. 16 hr.
(4) 4 min. 20 sec.
(5) 5 hr. 20 min.
(6) 2 da. 10 hr.
(7) 12 hr. 45 min.
(8) 4 da. 8 hr.
(9) 9 da. 22 hr.
(10) 3 hr. 16 min.

Worksheet #6

(1) 2 min 20 sec.
(2) 11 da. 7 hr.
(3) 4 hr. 10 min.
(4) 5 da. 2 hr.
(5) 3 hr. 20 min.
(6) 36 min. 45 sec.
(7) 5 hr. 35 min.
(8) 10 da. 22 hr.
(9) 25 min. 23 sec.
(10) 5 min. 6 sec.
(11) 7 hr. 5 min.
(12) 15 da. 11 hr.
(13) 20 min. 50 sec.
(14) 23 hr. 35 min.
(15) 27 da. 15 hr.

Worksheet #7

(1) 1 min. 55 sec.
(2) 1 da. 14 hr.
(3) 1 hr. 50 min.
(4) 3 da. 15 hr.

NOTE: Since students have now been taught to borrow and carry, problems should be considered wrong if they do not follow these principles in both borrowing and carrying the facts they have been taught.

Worksheet #8

(1) 60
(2) 60
(3) 24
(4) 60
(5) 24
(6) 60
(7) 24
(8) 60
(9) 60
(10) 24

Worksheet #9

(1) 1 min. 50 sec.
(2) 2 min. 55 sec.
(3) 15 min. 15 sec.
(4) 4 min. 40 sec.
(5) 1 min. 40 sec.

(1) 2 hr. 40 min.
(2) 17 hr. 18 min.
(3) 3 hr. 45 min.
(4) 21 hr. 15 min.
(5) 6 hr. 47 min.

(1) 1 da. 20 hr.
(2) 11 da. 4 hr.
(3) 5 da. 20 hr.
(4) 1 da. 21 hr.
(5) 10 da. 1 hr.

Worksheet #10

(1) 1 hr. 40 min.
(2) 19 hr.
(3) 9 min. 45 sec.
(4) 21 hr.
(5) 46 min. 2 sec.
(6) 40 min.
(7) 1 da. 3 hr. 55 min.
(8) 2 min. 12 sec.
(9) 5 hr. 56 min.
(10) 9 da. 3 hr.

Worksheet #11

(1) 13 min. 52 sec.
(2) 19 da. 3 hr.
(3) 7 hr. 49 min.
(4) 6 da. 22 hr.
(5) 9 min. 40 sec.
(6) 7 da. 20 hr.
(7) 35 hr. 21 min.
(8) 47 min. 27 sec.
(9) 2 hr. 19 min.
(10) 34 min. 2 sec.

Worksheet #12

(1) 4 da. 21 hr.
(2) 1 hr. 33 min. 12 sec.
(3) 13 hr. 53 min.
(4) 6 hr 6 min.
(5) 8 da. 20 hr.
(6) 1 da. 7 hr. 4 min.
(7) 5 min. 56 sec.
(8) 25 da. 9 hr.
(9) 14 hr. 55 min.
(10) 11 min. 55 sec.

Worksheet #13

(1) 11 min. 52 sec.
(2) 39 da.
(3) 12 hr. 24 min.
(4) 7 da. 22 hr.
(5) 8 Min. 16 sec.
(6) 6 hr. 43 min.
(7) 33 min. 36 sec.
(8) 3 da. 22 hr.
(9) 3 hr. 25 min.
(10) 7 min. 12 sec.

Worksheet #14

(1) 8 min. 53 sec.
(2) 18 hr. 41 min.
(3) 5 da. 21 hr.
(4) 1 min. 44 sec.
(5) 22 da. 4 hr.
(6) 9 da. 17 hr.
(7) 48 min. 40 sec.
(8) 5 hr. 31 min.
(9) 17 hr. 15 min.
(10) 12 min. 47 sec.

Worksheet #15

(1) 7 hr. 48 min. 56 sec.
(2) 5 da. 55 min.
(3) 10 min. 58 sec.
(4) 15 min. 7 sec.
(5) 1 hr. 46 min. 56 sec.
(6) 4 da. 22 hr.
(7) 1 da. 8 hr. 29 min.
(8) 13 hr. 52 min. 52 sec.
(9) 12 da. 6 hr. 17 min.
(10) 4 da. 21 hr. 58 min.

Worksheet #16

(1) 8 hr. 45 min. 55 sec.
(2) 41 da. 4 hr. 5 min.
(3) 11 min. 47 sec.
(4) 1 da. 10 hr. 51 sec.
(5) 35 min. 34 sec.
(6) 12 hr. 54 min.
(7) 1 da. 13 hr. 6 min. 27 sec.
(8) 3 hr. 48 min. 12 sec.
(9) 11 da. 20 hr.
(10) 31 da. 1 hr.

Test

(1) 2 hr. 50 min.
(2) 7 min. 54 sec.
(3) 46 da. 8 hr.
(4) 7 hr. 52 min.
(5) 2 da. 21 hr.
(6) 7 min. 42 sec.
(7) 7 da. 12 hr.
(8) 5 hr. 27 min.
(9) 1 hr. 16 min. 1 sec.
(10) 4 da. 19 hr.

Worksheet #17

(1) 300 sec. (2) 2 min. (3) 2 da. (4) 120 hr.
(5) 180 min.

Worksheet #18

(1) 360 sec. (2) 48 hr. (3) 6 min. (4) 240 min.
(5) 3 da.

Worksheet #19

(1) 360 sec. (2) 120 hr. (3) 2 hr. (4) 600 sec.
(5) 240 hr.

Worksheet #20

(1) 7 da. (2) 480 sec. (3) 72 hr. (4) 1 hr. 20 min.
(5) 240 min.

Worksheet #21

(1) 5 min. 42 sec. (2) 4 hr. (3) 2 da. (4) 72 hr.
(5) 3 min. 10 sec.

Worksheets #22

(1) 3 da.
(2) 240 sec.
(3) 3 min. 49 sec.
(4) 480 sec.
(5) 2 da.
(6) 10 hr. 20 min.
(7) 72 hr.
(8) 4 da.
(9) 360 sec.
(10) 720 min.
(11) 300 hr.
(12) 1 min. 24 sec.
(13) 1 da.
(14) 6 hr.
(15) 300 sec.
(16) 240 hr.
(17) 420 min.
(18) 5 min.
(19) 144 hr.
(20) 24 hr.

**Worksheet #23**

(1) 120 min.
(2) 48 hr.
(3) 720 min.
(4) 360 sec.
(5) 120 hr.
(6) 240 sec.
(7) 6 min.
(8) 300 min.
(9) 72 hr.
(10) 600 sec.
(11) 3 da.
(12) 2 min.
(13) 12 hr.
(14) 1 min.
(15) 2 da. 7 hr.
(16) 1 hr. 12 min.
(17) 4 min.
(18) 4 da.
(19) 1 da.
(20) 2 min. 28 sec.

**Worksheet #24**

(1) 480 min.
(2) 3 min. 55 sec.
(3) 168 hr.
(4) 1 da. 9 hr.
(5) 192 hr.
(6) 360 sec.
(7) 3 hr. 1 min.
(8) 2 da.
(9) 7 min.
(10) 144 hr.
(11) 3 da. 14 hr.
(12) 8 min.
(13) 180 min.
(14) 1 min. 33 sec.
(15) 72 hr.
(16) 720 min.
(17) 600 min.
(18) 120 sec.
(19) 1 da. 13 hr.
(20) 5 min.

**Worksheet #25**

(1) 2 da.
(2) 360 sec.
(3) 1 hr. 16 min.
(4) 480 sec.
(5) 3 min.
(6) 300 min.
(7) 2 da. 6 hr.
(8) 720 min.
(9) 4 min.
(10) 4 min
(11) 10 da.
(12) 1800 Sec.
(13) 4 da.
(14) 120 hr.
(15) 1080 sec.
(16) 240 min.
(17) 1 da.
(18) 1 hr.
(19) 2 da.
(20) 2 da. 8 hr.

**Worksheet #26**

(A) 144 hr. (B) 6 min. 5 sec.
(1) 240 sec. (2) 240 min. (3) 3 da. (4) 300 sec.
(5) 420 min.
(1) 6 min. (2) 2 min. (3) 3 da. (4) 4 hr. (5) 9 da. 20 hr.
(1) 96 hr. (2) 2 da. (3) 2 min. 20 sec. (4) 300 sec.
(5) 300 min.

**Worksheet #27**

(A) 240 hr. (B) 12 hr. 5 min.
(1) 480 sec. (2) 420 min. (3) 3 da. 14 hr. (4) 1440 min.
(5) 4 min.
(1) 3 da. (2) 600 sec. (3) 5 min. (4) 360 sec.
(5) 240 min.
(1) 48 hr. (2) 2 da. (3) 7 min. 55 sec. (4) 192 hr.
(5) 300 min.

Worksheet #28

(A) 120 min. (B) 4 min.

(1) 2 min. (3) 420 min. (3) 2 da. (4) 360 sec.
(5) 12 hr.

(1) 144 hr. (2) 48 hr. (3) 240 hr. (4) 3 hr.
(5) 240 sec.

(1) 120 hr. (2) 1 min. 5 sec. (3) 300 sec. (4) 72 hr.
(5) 240 min.

Test

(1) 180 Sec.
(2) 4 min.
(3) 3 da.
(4) 360 min.
(5) 1 da. 19 hr.
(6) 300 sec.
(7) 2 da.
(8) 6 min.
(9) 5 da.
(10) 144 hr.
(11) 168 hr.
(12) 600 sec.
(13) 480 sec.
(14) 2 hr.
(15) 7 hr.
(16) 2 hr. 8 min.
(17) 192 hr.
(18) 5 min. 45 sec.
(19) 1 da.
(20) 600 min.

1

# TABLE OF FACTS

60 Seconds (sec.) = 1 minute (min.)

60 minutes = 1 hour (hr.)

24 hours = 1 day (da.)

2

# IF YOU BORROW
# WHAT DO YOU BORROW ?

| |
|---|
| 60 sec. = 1 min. |
| 60 min. = 1 hr. |
| 24 hr. = 1 da. |

PROBLEM

BORROW 1 min. = 60 sec.

| | | | | | |
|---|---|---|---|---|---|
| ~~5~~ | 4 | min. | 20 | sec. → | 80 |
| − 3 | | min. | 40 | sec. | − 40 |
| 1 | | min. | | | 40 sec. |

STEPS:

1. What are you subtracting first ? sec.
2. Must you borrow ? yes
3. What do you borrow ? 1 min.
4. Can you subtract min. and sec. ? no
   You must change min. to sec.

REMEMBER: Things that are not alike cannot be added or subtracted. They must be changed.

5. Which fact number do you use? 60
6. Add the answer to Step 5 to the top number of the problem.
7. Finish the problem.

3

# REMEMBER

## WHAT ARE YOU BORROWING OR CARRYING ?

| | | | | |
|---|---|---|---|---|
| 60 | sec. | = | 1 | min. |
| 60 | min. | = | 1 | hr. |
| 24 | hr. | = | 1 | da. |

BORROW 1 MIN.

$$\begin{array}{rrrrrr} & \cancel{5} & \text{min.} & 20 & \text{sec.} \\ - & 3 & \text{min.} & 30 & \text{sec.} \end{array} \longrightarrow \begin{array}{rrrrrr} & 4 & \text{min.} & 80 & \text{sec.} \\ - & 3 & \text{min.} & 30 & \text{sec.} \\ \hline & 1 & \text{min.} & 50 & \text{sec.} \end{array}$$

CARRY 1 HR.

$$\begin{array}{rrrrrr} & 10 & \text{hr.} & 40 & \text{min.} \\ + & 5 & \text{hr.} & 30 & \text{min.} \\ \hline & & & 70 & \text{min.} \end{array} \longrightarrow \begin{array}{rrrrrr} & {\scriptstyle 1} & & & \\ & 10 & \text{hr.} & 40 & \text{min.} \\ + & 5 & \text{hr.} & 30 & \text{min.} \\ \hline & 16 & \text{hr.} & 10 & \text{min.} \end{array}$$

$-60$

BORROW 1 DA.

$$\begin{array}{rrrrrr} & \cancel{3} & \text{da.} & 4 & \text{hr.} \\ - & 1 & \text{da.} & 8 & \text{hr.} \end{array} \longrightarrow \begin{array}{rrrrrr} & 2 & \text{da.} & 28 & \text{hr.} \\ - & 1 & \text{da.} & 8 & \text{hr.} \\ \hline & 1 & \text{da.} & 20 & \text{hr.} \end{array}$$

4

# STEPS

Ask:

A. How many do you have ?

B. Which unit is bigger ?

C. How many little ones in 1 big one ?

D. If you have been given:
big – multiply; little – divide.

To get answer:

$C\overline{)A}$ $\quad C \times A$

| |
|---|
| A - answer to question A |
| C - answer to question C |

Transparency

5

| 60 sec. = 1 min. | formula |
|---|---|
| 60 min. = 1 hour | C  C)A |
| 24 hr. = 1 day | x A |

3 min. = _____ sec.

STEPS:

A. How many do you have? 3

B. Which unit is bigger? minutes (min. are bigger than seconds.)

C. How many little ones in 1 big one? 60

D. If you have been given: big – multiply X

little – divide _____

To get answer:

C
x A

A = answer to question A
C = answer to question C

C = 60
A = x 3
180

answer = 180 seconds

# 6

| 60 sec. = 1 min. | formula |
|---|---|
| 60 min. = 1 hour | C C)A |
| 24 hr. = 1 day | x A |

48 hr. = ____ da.

STEPS:

A. How many do you have? 48

B. Which unit is bigger? days (days are bigger than hours.)

C. How many little ones in 1 big one? 24

D. If you have been given: big – multiply ×

little – divide

C)A

A = answer to question A
C = answer to question C

$$24\overline{)48}\quad 2$$

48

answer = 2 days

7

| 60 sec. = 1 min. | formula |
|---|---|
| 60 min. = 1 hour | C C)A |
| 24 hr. = 1 day | x A |

____ min - 4 hr.

STEPS:

A. How many do you have? 4

B. Which unit is bigger? hours (hours are bigger than minutes)

C. How many little ones in 1 big one? 60

D. If you have been given: big – multiply x

little – divide

A = answer to question A
C = answer to question C

C = 60
x A = x 4
240 → answer = 240 min.

# 8

| | |
|---|---|
| 60 sec. = 1 min.<br>60 min. = 1 hour<br>24 hr. = 1 day | formula<br>C C)A<br>x A |

376 min. = _____ hrs.

STEPS:

A. How many do you have? 376

B. Which unit is bigger? hrs.

C. How many little ones in 1 big one? 60

D. If you have been given: big – multiply )

little – divide

C)A

A = answer to question A
C = answer to question C

```
    6
60)376
  360
   16
```

add

answer = 6 hrs. 16 min.

If it doesn't come out even, add the remainder on and label it the smaller unit OR make it a fraction of the bigger unit.

9

| 60 sec. = 1 min. | formula |
|---|---|
| 60 min. = 1 hour | C C)A |
| 24 hr. = 1 day | x A |

153 sec. = _____ min.

STEPS:

A. How many do you have? 153

B. Which unit is bigger? min.

C. How many little ones in 1 big one? 60

D. If you have been given: big – multiply ×

little – divide ÷

C)A

$$60\overline{)153}\quad 2,\ 120,\ 33$$

A = answer to question A
C = answer to question C

add

answer = 2 min. 33 sec.

If it doesn't come out even, add the remainder on and label it the smaller unit OR make it a fraction of the bigger unit.

10

| 60 sec. = 1 min. | formula |
|---|---|
| 60 min. = 1 hour | C  C)A |
| 24 hr. = 1 day | x A |

75 min. = _____ hr.

STEPS:

A. How many do you have? 75

B. Which unit is bigger? hour

C. How many little ones in 1 big one? 60

D. If you have been given: big – multiply ×

little – divide

C)A

$$60\overline{)75}\quad 1$$

60

15

A = answer to question A
C = answer to question C

add

answer - 1 hr. 15 min.

If it doesn't come out even, add the remainder on and label it the smaller unit OR make it a fraction of the bigger unit.

11

| 60 sec. = 1 min. | formula |
|---|---|
| 60 min. = 1 hour | C $C\overline{)A}$ |
| 24 hr. = 1 day | x A |

_____ hrs. = 130 min.

STEPS:

A. How many do you have? 130

B. Which unit is bigger? hrs.

C. How many little ones in 1 big one? 60

D. If you have been given: big – multiply ×

little – divide

$C\overline{)A}$

A = answer to question A
C = answer to question C

$$60\overline{)130}\quad 2,\ 120,\ 10$$

answer = 2 hrs. 10 min.

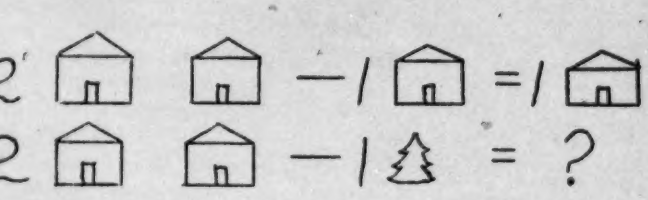
If it doesn't come out even, add the remainder on and label it the smaller unit OR make it a fraction of the bigger unit.

# 12

Only things that are alike can be added or subtracted.

1 apple + 1 donut = ?

1 + 1 = 2




| | |
|---|---|
| 3 hr. 10 min. | 2 da. 4 hr. |
| + 5 hr. 20 min. | + 3 da. 6 hr. |
| 8 hr. 30 min. | 5 da. 10 hr. |

| | |
|---|---|
| 13 min. 15 sec. | 4 min. 30 sec. |
| + 15 min. 20 sec. | − 1 min. 15 sec. |
| 28 min. 35 sec. | 3 min. 15 sec. |

| | |
|---|---|
| 4 da. 7 hr. | 6 hr. 40 min. |
| − 2 da. 5 hr. | − 4 hr. 10 min. |
| 2 da. 2 hr. | 2 hr. 30 min. |